

Additional new *Drymaeus* species from northern Peru (Mollusca, Gastropoda, Bulimulidae)

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Abstract – Two new species, *Drymaeus* (*D.*) *costatus* and *D.* (*D.*) *luculentus*, are described from northern Peru from recently collected material.

Key words – Gastropoda, Peltellinae, types.

Résumé – Deux nouvelles espèces, *Drymaeus* (*D.*) *costatus* et *D.* (*D.*) *luculentus*, sont décrites dans le nord du Pérou à partir de matériel récemment collecté.

Mots-clés – Gastropoda, Peltellinae, types.

Introduction

Further research in a relatively understudied area in Dept. Amazonas, northern Peru, reveals the presence of two species new to science. We describe them here, awaiting further data on their distribution.

Material and methods

Measurements of the shell, i.e. total shell height (H), the diameter of the shell (W), the height of the aperture (HA), width of the aperture (WA), height of last whorl (LW), and the number of whorls (NW), were taken using the methods in BREURE & VEGA-LUZ, 2020: fig. 1. The material on which this study is based has been deposited in the following collections: MNCN, Museo Nacional de Ciencias Naturales, Madrid, Spain; NHMUK, Natural History Museum, London, U.K.; RVL, private collection Ricardo Vega-Luz, Malaga, Spain; VMA, private collection Valentín Mogollón, Lima, Peru.

Systematics

Family Bulimulidae Tryon, 1867

Genus *Drymaeus* Albers, 1850

Drymaeus (*Drymaeus*) *costatus* spec. nov. (Fig. 1-4)

<http://zoobank.org/NomenclaturalActs/83BD29C4-113C-4D82-8039-C698385EC413>

Diagnosis. – A *Drymaeus* species characterised by the shallowly ribbed surface, a rather swollen last whorl which has a colour pattern of irregular blotches, and is axially striped with whitish lines; the white lip somewhat sinuate, expanded and reflected.

Description. – Shell up to 45.0 mm height, 1.78 times as long as wide, rimate, the spire with almost straight sides, rather thin. Colour roseate to yellowish, dotted with irregular dark reddish-brown blotches, partly arranged in an axial pattern, with axially arranged whitish lines evenly spaced, mostly noticeable on the last whorl. Upper whorls pink to yellowish. Surface dull to rather shiny when fresh or collected alive; the upper whorls with indistinct growth lines, becoming stronger towards the last whorl, which is covered by shallow axial riblets and with some indistinct, interrupted spiral grooves. Protoconch with a reticulate sculpture of

ribblets and spiral striae, which are of equal strength and form a grating pattern. Whorls 5.5, nearly flat except the last whorl which is rather swollen, last whorl 0.83 times the total shell height; suture slightly impressed, somewhat ascending behind the lip. Aperture elongate-ovate, 1.9 times longer than wide, 0.65 times the total height. Peristome expanded and reflected, somewhat sinuate above, white. Columellar margin curved, reflected, white. Parietal wall with a very thin, whitish callus.

Animal. – Body whitish, lined with a bright orange-yellow colour at the margin of the sole, the head with a greyish tint which expands into the tentacles, which are dark-grey at the tips.

Type material. – Peru, Dept. Amazonas, Prov. Chachapoyas, District Omia, ca. 1800–1900 m, V. Castillo Villanueva leg., xi.2020. Holotype MNCN 15.05/200126. Paratypes RVL-DR2 (2), VMA 1507 (1). Dept. Amazonas, Prov. Chachapoyas, Cheto, ca. 2500–2700 m, V. Castillo Villanueva leg., xi.2020. Paratype NMHUK 20210001 (1), Measurements of the material are given in Table 1.

Remarks. – This species is found in wooded areas near limestone outcrops. The specimens collected are constant in their surface sculpture, but the colour pattern is variable. This species resembles *Drymaeus* (*D.*) *valentini* (Breure & Vega-Luz, 2020), occurring in the same general area, differing in the larger size, the less saccate last whorl, and the different colour pattern. It may also be compared to *Drymaeus* (*D.*) *regularis* Fulton, 1905 from Chanchamayo, from which it differs in the larger size, the reflected lip and the less elevated spire.

Etymology. – *L. costatus*, having ribs. The specific epithet characterises the shallow ribblets on the surface of the last whorl.

Species	Depository	H	W	AH	AW	LW	NW
<i>D. costatus</i>	MNCN - holotype	43.5	24.3	28.1	14.9	35.7	5.8
	NHMUK - paratype 1	44.5	25.6	28.4	15.9	37.2	5.5
	RVL - paratype 2	45.0	23.7	29.3	14.9	37.8	5.3
	RVL - paratype 3	42.2	24.1	26.5	14.4	35.1	5.5
	VMA - paratype 4	44.6	25.8	29.9	15.8	37.1	5.5
<i>D. luculentus</i>	NHMUK - holotype	34.9	13.7	17.3	7.7	24.3	5.5
	MNCN - paratype 1	34.5	13.7	17.4	8.0	25.1	5.5
	RVL - paratype 2	34.2	15.0	17.9	8.2	24.9	5.4

Table 1. Measurements in *Drymaeus* (*D.*) *valentini* and *D. (D.) luculentus* spec.nov.; abbreviations see Methods.



Figure 1. *Drymaeus (Drymaeus) costatus* spec. nov., holotype, MNCN 15.05/200126. A-F, different views of the shell ; H : 43.5 mm).

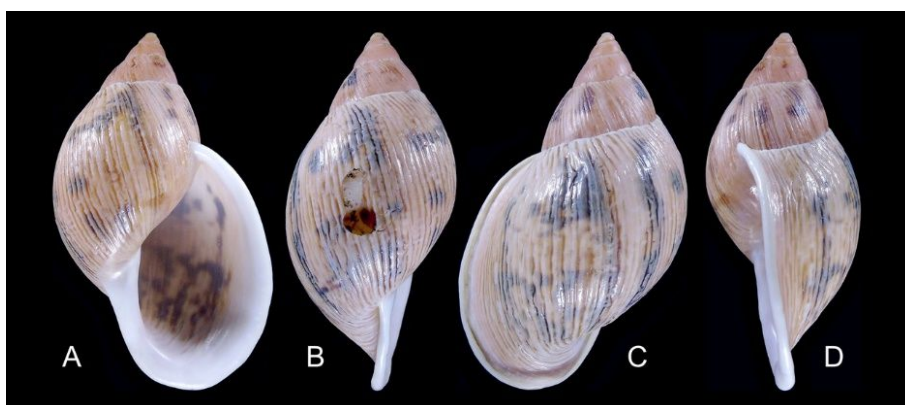


Figure 2. *Drymaeus (Drymaeus) costatus* spec. nov., paratype, NHMUK 20210001. A-D, different views of the shell.



Figure 3. *Drymaeus (Drymaeus) costatus* spec. nov. A-E, variation in colour and shape in the type series.

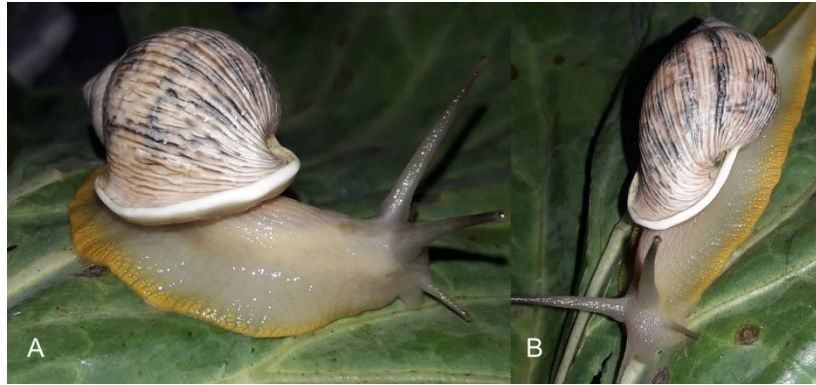


Figure 4. *Drymaeus (Drymaeus) costatus* spec. nov., living specimen. A–B, showing the colours of the shell and animal.

Drymaeus (Drymaeus) luculentus spec. nov. (Fig. 5-8)

<http://zoobank.org/NomenclaturalActs/b33fbc4a-181b-40b7-90cd-9b161619afaf>

Diagnosis. – A *Drymaeus* species characterised by its slender fusiform shape, the colour pattern of two spiral bands on the last whorl, with arrow-like dark-brown and whitish parts; the white lip with receding basal part and the deep purple inner colouration of the aperture.

Description. – Shell up to 34.9 mm height, 2.44 times as long as wide, almost imperforate, the spire with slightly convex sides, rather thin. Colour of the apex black-purple fading to dark-red and yellowish on the transition to the teleoconch, which colour ranges from yellowish at the top to a multicolour at the base with brown, bluish-green and whitish hues in various intensities, crossed with one (on the spire) respectively two spiral bands (on the last whorl), with arrow-like dark-brown and whitish parts; the whitish and brownish colour of these bands fade vertically in an irregular way, most noticeable on the last whorl. Surface rather shiny when fresh or collected alive, the whorls with indistinct growth lines. Protoconch with a reticulate sculpture of riblets and spiral striae, which are of equal strength and form a grating pattern. Whorls 5.5, rather convex, last whorl 0.72 times the total shell height; suture slightly impressed, somewhat crenulate, slightly ascending behind the lip. Aperture compressed elongate-ovate, 2.2 times longer than wide, 0.51 times the total height. Peristome simple, somewhat sinuate above, white. Columellar margin regularly curved, white fading to deep purple on the inside of the aperture. Parietal wall with a thin, purplish callus.

Animal. – Body chocolate-brown, the neck lined with a pale orange line bordered on both sides by a series of irregular spots of the same colour, which are repeated in two longitudinal bands parallel to the margin of the sole, and a series of white spots on both sides of the head; tentacles chocolate-brown.

Type material. – Peru, Dept. Amazonas, Prov. Chachapoyas, District Molinopampa, ca. 2600 m, V. Castillo Villanueva leg., xi.2020. Holotype NHMUK 20210002. Dept. Amazonas, Prov. Chachapoyas, District Omia, ca. 1800–1900 m, V. Castillo Villanueva leg., vii.2020. Paratype MNCN 15.05/200127 (1), RVL-DR3 (1). Measurements of the material are given in Table 1.

Remarks. – This species belongs to a group of similar fusiform shaped taxa, distributed from Colombia to Peru, with an angular-ovate aperture. Supposedly several species are variable in their colouration and sometimes in details of their shells (*e.g.*, BREURE & BORRERO, 2019: 10), which may trouble a correct identification. The specimens at hand are constant in their surface sculpture, but the shape and colour pattern is slightly variable. The paratypes (Fig. 8) have a pink apex, the colours on the last whorl are brownish with yellowish or whitish; the shape of the basal lip may be more angular than in the holotype. This species resembles *Drymaeus (D.) cantatus* (Reeve, 1848), reported from the Tarma region in central Peru, differing in the slightly smaller size, the different ratio of aperture height and shell height, and the different colour pattern. It may also be compared to *Drymaeus (D.) angulobasis* Pilsbry, 1944 from the same area in central Peru, from which it differs in the somewhat larger size, the lack of a constriction in the basal lip, and the regularly rounded columellar margin. Finally this new species may be compared to *Drymaeus (D.) orthostoma* (E.A. Smith, 1877), described from an unknown locality in Ecuador and also listed without specific locality in RAMÍREZ *et al.* (2003) from Peru, from which it differs in the lack of a weak columellar fold, and the less angular transition between columellar and basal margin of the lip.

Etymology. – *L. luculentus*, colourful. The specific epithet characterises the colourful shell with its bright colours.

Discussion

The large number of *Drymaeus* species now known from Peru, with several of them reported from ill-defined localities based on historical collections, and others from areas where distributional data are scarce, makes the need for revisionary work clear. Preferably this should not be limited to the external morphology of the shells, but should also include anatomical and molecular studies to clarify the intraspecific variation which is often confusing in the classification of this genus.



Figure 5. *Drymaeus (Drymaeus) luculentus* spec. nov., holotype NHMUK 20210002. A–D, different views of the shell.

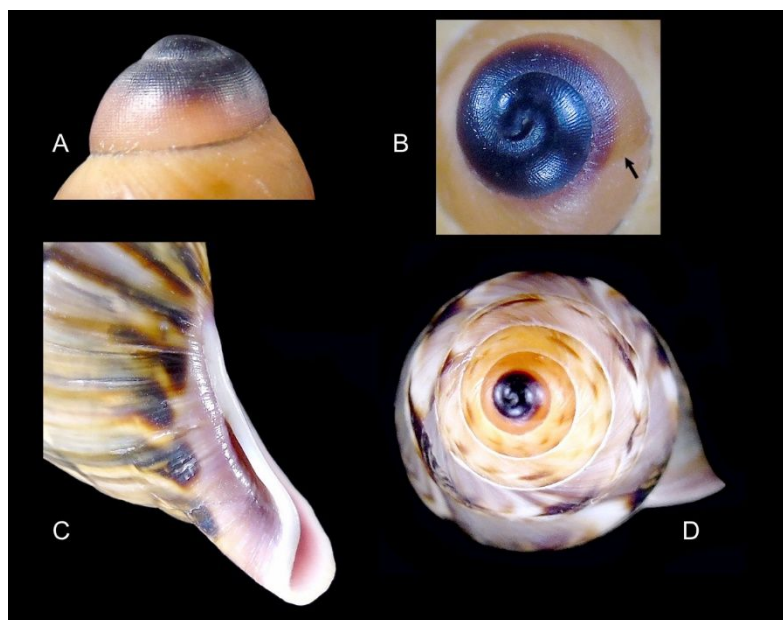


Figure 6. *Drymaeus (Drymaeus) luculentus* spec. nov., holotype NHMUK 20210002. A–C, details of the shell; arrow marks the transition between proto- and teleoconch. D, apical view.



Figure 7. *Drymaeus (Drymaeus) luculentus* spec. nov., living specimen. A-B, showing the colours of the shell and animal.

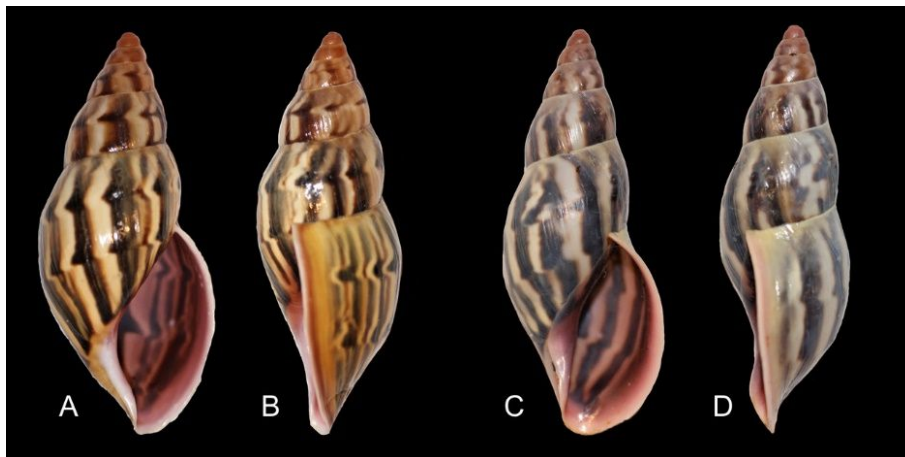


Figure 8. *Drymaeus (Drymaeus) luculentus* spec. nov., variation in paratypes. A-B, MNCN 15.05/200127. C-D, RVL-DR3.

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References

- BREURE, A.S.H. & BORRERO, F.J. 2019. A review of *Stenostylus* Pilsbry, 1898 and *Drymaeus* Albers, 1850 (Mollusca: Gastropoda: Orthalicoidae: Bulimulidae) from Colombia, with description of new species. *Folia Conchylologica*, 52: 1-79.
- BREURE, A.S.H. & VEGA-LUZ, R. 2020. Mystery solved: a new *Drymaeus* species from northern Peru (Mollusca, Gastropoda, Bulimulidae). *Folia Conchylologic*, 59: 1-4.
- RAMÍREZ, R., PAREDES, C. & ARENAS, J. 2003. Moluscos del Perú. *Revista de Biología Tropical*, 51 (Suplemento 3): 225-284.